[redacted]8806-69 25X1A
Copy 3 of 7

3 March 1969

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Career Development Course #3
31 March - 3 April 1969

1. Attachment I is the current schedule of presentations, as it is being forwarded to the Course Director.

25X1A 2. All meetings will be held in the Comptroller's Conference Room, 2A20, [redacted] unless otherwise arranged by the instructor (please advise me if such arrangements are made).

3. It has been noted that the students desire supplementary and review reading material. When appropriate, hand-outs should be provided. In addition, there will be a safe in the conference room where supplementary material can be kept for the students.

4. It is requested that all lecturers prepare course outlines (lesson plans), in the format of the lesson plan attached (attachment II). Such outlines should be submitted to me by close of business 13 March 1969.

5. At the request of the course director, there will be no examination given on the content of the OSA presentations.

[redacted] 25X1A

A(T)D/R&D/OSA

Attachments: (2)
1 - Schedule
2 - Course Outline

25X1A

SECRET

HANDLE VIA [redacted]
CONTROL SYSTEM

25X1A

25X1A A(T)D/R&D/OSA/[redacted]:anw/3 Mar 1969
Distribution:
Copy 1 - A(T)D/R&D/OSA
2 - EO/SA
25X1A 3 - AMS/OSA[redacted]
25X1A 4 - COMPT/OSA[redacted]
25X1A 5 - P&RD/M/OSA[redacted]
6 - IDEA/O/OSA[redacted]
7 - RB/OSA
Chrono(Not numbered)

25X1A

Attachment I to
[redacted]8806-69

25X1A

CAREER DEVELOPMENT COURSE #3
SCHEDULE

MONDAY, 31 March 1969

0830	Introduction
0945	OSA Organization
1030	Break
1045	Historical Review of OSA and Projects
1200	Lunch
1315	IDEALIST Program
1445	OXCART Program
1515	Break
1530	Photographic Sensor Systems
1630	Dismissal

TUESDAY, 1 April 1969

0830	Engine Performance
0900	Vehicle Performance
1000	Engine/Aircraft Interface
1030	Break
1045	Flight Controls, Navigation
1200	Lunch
1315	Advanced Programs
1345	Aero-Medical Programs

HANDLE VIA [redacted]

25X1A

1515	Break
1530	Aero-Medical Programs, Cont.
1630	Dismissal

WEDNESDAY, 2 April 1969

0830	CIA/NRO Programming
0930	Contract Management
1030	Break
1045	Communications
1145	Lunch
1300	Project Security
1400	Logistics and Supply
1445	Break
1500	Maintenance
1545	[redacted] 25X1
1630	Dismissal

THURSDAY, 3 April 1969

0830	[redacted] 25X1
0915	Mission Planning, Operations, Weather, Intel
1015	Break
1030	Mission Planning, Cont.

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8 April cont.

1300	Lunch
1315	CSA Panel, Question/Discussion Period (DD/SA, D/O, D/M, COMPT, C/SS, C/AMS, D/R&D)
1490	Dismissal

25X1A

Attachment II to
[redacted] 8806-69 25X1A

LESSON TITLE: Project OXCART

DIVISION: OXCART, OSA

25X1A INSTRUCTOR: [redacted]

DATE/TIME/PLACE: 28 February 68; 1330 to 1500; Control Center, OSA

PART I - OVERVIEW

1. OBJECTIVE:

a. To introduce the student to Project OXCART.

b. To provide the student with an indoctrination of the operational aspects of Project OXCART.

2. INSTRUCTIONAL AIDS: Charts, Movie

3. TIME REQUIRED: 1 1/2 Hours

4. PLAN OF PRESENTATION:

The instructor will introduce the lesson with a brief history of Project OXCART from program approval to present program posture. He will explain the A-12 reconnaissance system and the operational facets of training, mission generation and command and control. A review of current operations will be presented. A short movie of the A-12 in flight will be shown following the briefing.

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PART II - LESSON PLAN

1. MISSION:

Statement of mission.

2. HISTORY:

Major milestones from Presidential approval to current posture.

3. A-12 VEHICLE:

General description of aircraft and major systems.

4. A-12 INVENTORY:

a. Flight Test
b. Detachment
c. Accident History

5. PERFORMANCE STATUS/MILESTONES:

a. Longest, highest, furthest flight, etc.
b. Recapitulation of sorties flown, flying hours, etc.
c. Pilot Status
25X1A d. Sensor/[redacted] Status

25X1A 6. [redacted]

a. Organization
b. Description of airdrome/facilities.
c. Control zones
25X1A d. [redacted]
e. Support aircraft
f. Filing procedures

7. OTHER PROJECT DETACHMENTS/STATUS:

Kadena Air Base (Operational)
Eielson Air Base (operationally ready)
Incirlik Air Base (operationally ready)
25X1 [redacted]
Beale Air Force Base (Project and 903rd)

25X1A

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8. PROJECT PILOTS:

a. Selection criteria
b. Pre-flight training
c. Readiness training

9. CONCEPT OF OPERATIONS:

a. OSA direction and control
25X1A b. [redacted] forward base as required
c. Range extension thru aerial refuelings
d. Penetration speed/altitude
e. CIA civilian pilots
f. No aircraft markings
g. Flights "black"

10. ATTAINMENT OF READINESS POSTURE:

a. Training missions--simulated profiles
b. CPX
c. FBX
d. ORIT

11. MISSION GENERATION:

a. 24-Hour countdown
b. Command and control
c. Operational communications
25X1 d. [redacted]
e. Tactical Doctrine

12. BLACK SHIELD:

a. QRC for deployment
b. Deployment
c. Recap operational missions flown to date
d. Sample photography

13. FILM:

To be narrated.

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14. QUESTION PERIOD:

a. Briefly state the mission of Project OXCART.

b. Briefly state the concept of operations for Project OXCART

c. Where is the ZI Project detachment for OXCART located? Overseas supporting detachments?

d. Following apply to the BLACK SHIELD operation:

(1) Operating location?

(2) Primary mission?

(3) Approximate number of operational missions flown?

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Aeromedical Programs

A. Introduction

1. Aeromedical Staff -- organization and Function 25X1A

Slide #1

a) Chief - [redacted] 25X1A

Deputy -

Evasion & Survival Superintendent - [redacted]

b) Function: AMS/OSA is responsible to D/SA for all aeromedical aspects of OSA/DD/S&T operations, training, research and development. The function of AMS is to insure that the operational aircrew is properly evaluated and selected; that his health, both physical and mental, is maintained at peak effectiveness; and that his personal protective, survival, escape and evasion equipment and training are up-to-date and satisfactory, so that the aircrew can participate effectively in attaining OSA mission objectives.

c) I will limit my presentation to the life support aspects of the aeromedical program

2. Overview of Life-Support Program
Slide #2

Life Support: simply denotes that the equipment, system, or procedure of concern has, as its primary objective, the protection of the aircrew member and the maintenance of his efficiency in performing his duties.

Synonyms and overlapping Specialties

Human Factors
Bioastronautics
Space Physiology and Medicine
Environmental Physiology and Medicine
Physiological Support
Personal Equipment

a. Slide 3

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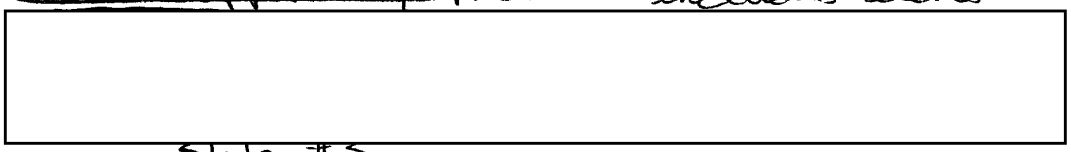
~~Slide #2~~ ~~Life Support Equipment -- includes items~~



Slide #3

a. Aircraft Systems

(1) Cockpit Pressurization --- most directly concerned with physiological well-being, ie Protection --- but also relates to Performance.

(2) Cockpit Air Conditioning --- is or may be both to insure Performance (efficacy & comfort) and Protection

(3) Oxygen Supply ---- provides Protection --- includes hardware as through regulator

(4) Ejection --- Protection, ie enables escape from disabled aircraft.

(5) Instrument Configuration and Layout --- for most EFFicient Performance

(6) Control Configuration & Cockpit Layout --- for optimum Performance --- but can provide protection as in the case of spatial disorientation

(7) Ventilation System --- provides both Protection and Comfort (Performance)

(8) Restraint System : Provides protection for abrupt accelerations or decelerations including ejection.

(9) Relief Provisions : Efficient Performance --- a physiological necessity however provided by relief tube or bottles etc.

b. Aircrew Systems (also Personal Equipment)

(1) Oxygen Delivery : Provides Protection but method affects Performance etc. --- Masks through Pressure Suits

(2) Head Protection -- Helmet etc for anti-buffet, abrupt accelerations, ground impact after ejection

(3) Parachute --- Protection -- part of overall escape system.

(4) Survival Equipment --- Protection --- includes many categories of items from rafts and flotation devices through weapons, food, clothing and medical equipment and tools.

(5) Emergency Oxygen Supply -- a Protection from failure of primary system --also for bailout.

(6) Clothing -- Protection, but type also involves efficiency (Performance)

(7) Feeding Provisions --- Mainly a Performance item --- includes food & liquids, storage and provisions for ingestion.

(8) Cushions --- Mainly a performance item

C. Training ~ Slide #4

(1) Equipment and Procedures

(2) Survival, Evasion, Resistance, and Escape

B. Slide #5 - Depicts the considerations involved in the development of Life Support Equipment or Systems.

3. Thermal Balance

Man requires a very steady body temperature to function normally and efficiently over any given time period. He can encounter rising body temperature if either metabolic or externally applied heat load surpass his capability of losing heat. He can encounter reduced body temperature if his heat loss exceeds his metabolic heat producing capacity. The effects of either rising or falling body temperature ranges from impaired performance to death.

Slide #8

a. Heat Load

(1) Metabolic: level of heat production directly related to activity. Ranges from 80 Calories/hr at complete rest to 1,600 Cal/hr during maximum physical exertion.

(2) Environmental: Radiation, Conduction and Convection may add to heat load.

b. Heat Loss

(1) Radiation: amount heat lost depends on temperature of surrounding objects.

(2) Convection: depends on temperature of air in contact with skin

and rate of flow if forced convection.

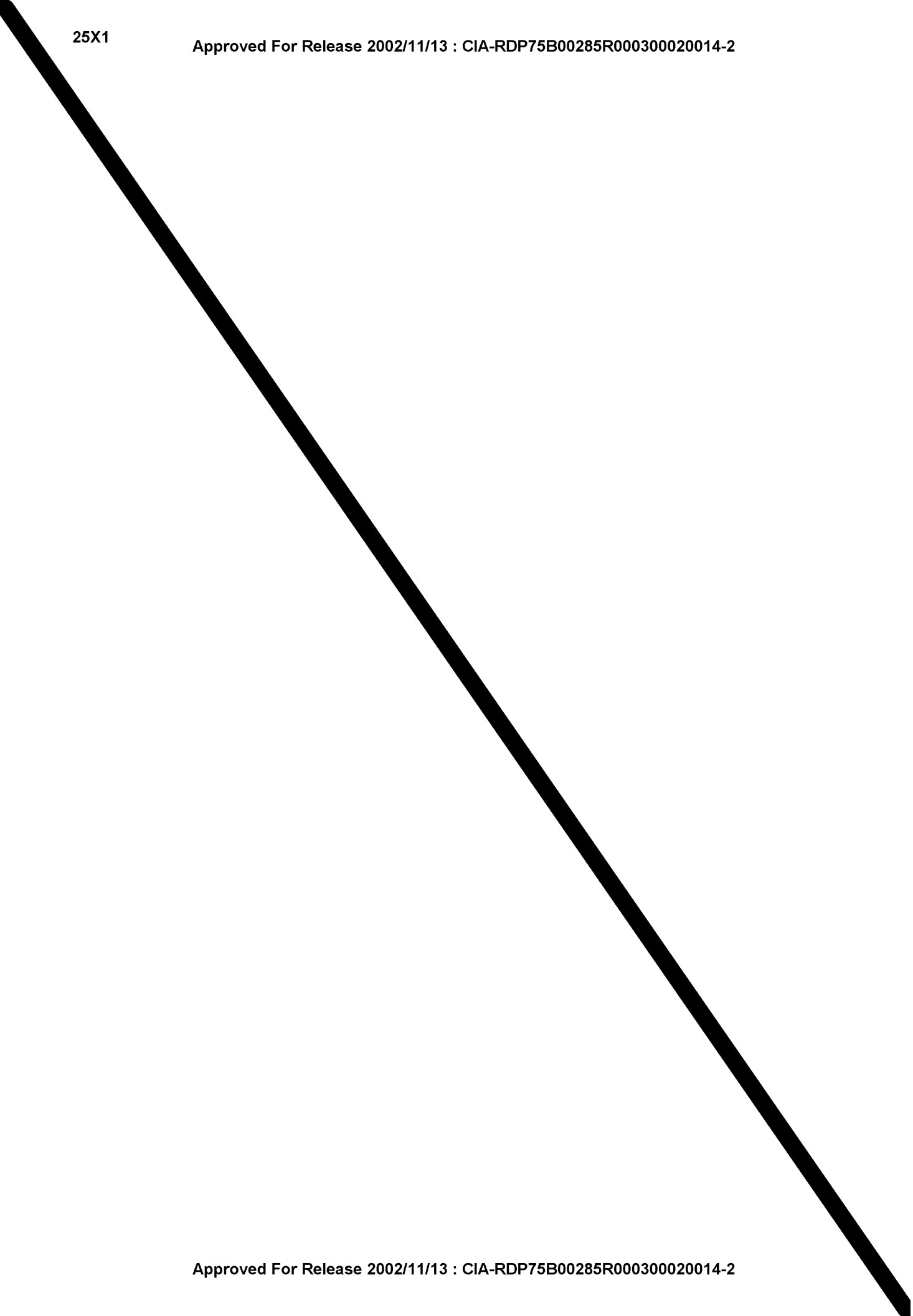
(3) Conduction: depends on temperature of objects in contact with the body.

(4) Evaporation: depends on air temperature and relative humidity.

C. [redacted]. Protection

(1) [redacted] From Heat: aircraft air conditioning system, insulated/reflective clothing, ventilation of pressure suit.

(2) [redacted] From Cold: aircraft heating system, insulated clothing, [redacted] heated clothing.



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(1) Considerations

(a) Acceleration

Limits of tolerance are: Upward: 20 G's with a rate of onset of 200-300 G's/sec. Downward: 12 G's with a rate of onset of 100-200 G's/sec.

(b) Restraint system: Shoulder harness, lap belt, headrest and foot retractors

(c) Effects: Neck and back injuries.

d. Windblast

(1) RAM pressure is a function of speed and altitude as follows:
increases proportionally w/ airspeed
inversely proportional to altitude

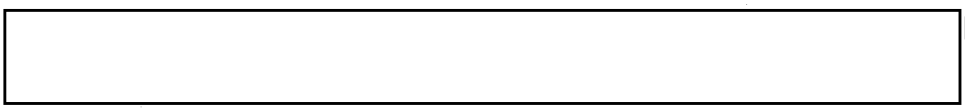
(2) Injury includes tissue damage, lung and abdomenal injury by inflation, flailing injury.

(3) Injury can be expected at a Q of 4.0 psi and above with no protection. Fatal above about 8-5 psi

(4) Protection involves restraint and isolation from the air mass (ie pressure suit & capsule plus restraint system).

e 5. Deceleration

(1) Related to RAM pressure; ie speed, density and mass. Rate of onset is critical.



ILLEGIB

(3) Effects are impact/crushing type injury.

(4) Protection: Increase mass, restraint

f. 5. Spin

(1) During free-fall man will rotate about center of gravity in a horizontal plane.

~~(2) Limits of tolerance are:~~

(3) Effects are: Disorientation, unconsciousness, parachute collapse etc.

(4) Protection: Stabilization of man or man seat combination or capsule during descent by parachute etc.

g. Hypoxia

Must provide emergency oxygen supply for duration of descent

h. Frostbite

Must provide adequate clothing, insulation

i. Parachute Opening Shock

Related primarily to speed at time of opening. Delay must be automatically built into system to reach optimum conditions of speed/altitude.

j. ~~Canopy Release~~ Parachute Landing

Injuries prevented by training, helmets, proper parachute design.

k. Canopy Release

Injuries related to dragging or drowning. Must provide quick release hardware with reliability and ease of operation and provide adequate training.

l. Survival -- a whole separate subject.

C. A Description of U-2R Life Support Equipment

1. Pressurization / Air Conditioning / Ventilation System

High pressure air is bled from the last compressor stage of the engine and conditioned by an air cycle refrigerator - water separator - mixing muff --- to deliver pilot selected temperature air to the cockpit and to the pilot's pressure suit. A separate cold-air-only line from the turbine is routed to the pilot's pressure suit inlet so he can obtain colder-than-cockpit air.

Pressurization controls the outlet of air such that no pressurization occurs below 7,500 feet, keeps the pressure isobaric at 7,500 feet MSL to 18,500 feet flight altitude, and maintains a 3.88 psig ΔP at all altitudes above 18,500 feet. Which gives a cabin altitude of 25,000 at 50M', 28,500 at 65M' and nearly

25X1A

2. Oxygen System

Dual system. 2 10 liter LOX converters, dual plumbing, dual regulators and gauges. Duration of 22-24 hours or more (total) with 10-12 hours on one system

3. Ejection Seat / Restraint System / Parachute

She rocket powered Lockheed Stabilized Ejection Seat (originally developed for the SR-71) and associated restraint system encorporates the following features:

(a) 0 altitude - 0 knots to max speed and altitude capability -- through-the-canopy capability.

(b) Drogue stabilization parachute attached to the ejection seat which stabilizes the man/seat mass during last stages of rocket burn and coast (ie prevents tumbling) --- and prevents spinning during descent from high altitude to 15,000 feet.

(c) Man/seat separator which fires at 15,000 feet or after 1.3 seconds for low altitude

ejection

(d) Lap belt and shoulder harness/ inertia reel for torso restraint. D-ring initiator handle for arm restraint. Bat-Wings for leg-spread restraint. Foot retractor cables for leg flailing restraint.

(e) Back-Up T-handle to fire seat if primary system fails. Foot cables are cut twice to preclude hang-up. Manual handle for ground egress.

(f) 35 ft slug/gun deployed personnel parachute -- shaped skirt for stability and reduced velocity at impact.

(g) Manual D-ring back-up to automatic deployment.

Slide 10

4. Pilots Protective Assembly

The full pressure suit / helmet combination encorporates the following

(1) Duality of oxygen breathing regulators and suit Pressure Controllers for safety and mission completion.
(2) Electrically heated visor to prevent fogging
(3) Face barrier to separate O_2 breathing cavity from air vented suit.
(4) Mechanical visor seal for reliability
(5) Feeding / Drinking port for one-handed operation on long duration flights.
(6) Head supported weight of only 6.3 lbs (versus 7 to 10 for other FP helmets)
(7) Pressure sealing helmet / suit disconnect with bearings allowing head mobility when pressurized
(8) Helmet tie down assembly to prevent helmet rising when inflated.
(9) Flotation garment built into outer cover with CO_2 and oral inflators.
(10) Parachute harness integrated into outer cover for maximum comfort.

(11) Ventilation ductings from ~~inlet~~ to head and extremities. Air carries heat and perspiration out via controller.

(12) Entry zipper runs down back, under crotch and up front for ease of donning / doffing.

(13) Suit controller duality. Adjustable pressure control knob for test and comfort control

(14) Suit pressure gage

(15) Dual O_2 hoses — Normal and emergency.

(16) Accessory pockets as required -- including survival items

(17) Urine elimination system for long duration flights --- pressure differential system.

slide (11) (18) Construction - 5 layers plus vent channels

(a) Cotton long underwear

(b) Comfort liner — nylon for ease of donning and doffing

(c) Vent channels

(d) Gas containing layer - neoprene impregnated nylon, pressure sealing zippers, hardware and penetrations

(e) Restraint layer - HT link net for restraint and mobility

(5) Cover layer — Nomex HT, plus flotation, harness, pockets etc.

5. Emergency Oxygen System

(a) Dual O_2 cylinders, reducers, hoses from seat kit to PPA --- sufficient supply for fly-down or ejection/bail-out

(b) Manually activated or automatic upon ejection.

6. Survival Equipment

(a) Seat kit container -- raft, radio, rescue and survival aids, E+E clothing etc.

(b) PPA pockets

(c) Specialized cushions -- sleeping bags, free lowering devices

B. General Physiological Requirements — Slide #5

Slide #6 1. Total Pressure & Barometric / Atmospheric Pressure

The atmosphere, a mixture of gases but primarily nitrogen and oxygen, exerts a force or pressure on all objects within this envelope of gases. Man is not sensitive to or affected by the absolute pressure in a direct sense. However, changes in pressure can affect man as follows:

a. Mechanical Effects of Pressure Change

The expansion/contraction of gases "trapped" in hollow organs of the body in accordance with BOYLE'S Law, ie

$$P_1 V_1 = P_2 V_2 \quad \text{or} \quad \frac{P_1}{P_2} = \frac{V_2}{V_1}$$

Which related to ΔP_B gives this relationship

Black board

Altitude	P_B (Atmos)	Relative Volume of Gas	
		Dry	wet {saturated at 37°C
s.l.	1	1	1
18,000	1/2	2	2.14
34,000	1/4	4	5
43,000	1/6	6	8

(1) Areas of Body which May be Affected

blackboard

- Ears
- Sinuses
- GasTro-IntesTinal TracT
- Lungs

(2) Prevention For / ProtecTion From EFFecTs

- Training
- Health
- Diet
- Cabin Pressurization

2. AlTered Partial Pressures

blackboard ← DalTon's Law -- $P_T = P_1 + P_2 + \cdots + P_n$ says that as total pressure decreases, partial pressures of individual gases decrease. Man can suffer from lowered partial pressures or imbalances of partial to total pressure relationships

Slide # 6

a. Decompression Sickness ("Bends")

N_2 bubbles formed in body when dissolved N_2 tension exceeds P_B by a critical amount (approx 2:1). Dissolved N_2 does not attain immediate equilibrium with ambient N_2 via lungs

due to solubility and perfusion limitations.

(1) Areas of Body affected

Skin sensations
Joints (Bends)
Lungs (chokes)
Nervous System
Cardiovascular System

(2) Protection From Effects

Cabin Pressurization

18,000
25,000
30,000

Denitrogenation

Slide #6 b. Boiling of Body Fluids

Potential for this exists whenever P_B is < the vapor pressure of body fluids (H_2O) at 37°C (body temp) which is 47 mm Hg.

(1) Areas affected — all

(2) Prevention - non exposure via cabin pressure / pressure suit

Slide #5

C. Hypoxia (O_2 deficiency)

(1) Cause: Man requires a PO_2 in his lungs of 60-100 mm Hg in order for all of his tissues to receive an adequate O_2 supply and hence to function normally. This corresponds to an altitude range of S.L. to 10,000 breathing air (21% oxygen) or 35-40,000 feet breathing 100% Oxygen

(2) Protection: above 10,000 feet, man must breathe air with added O_2 (ie increased % O_2) to maintain 60-100 mm Hg. Finally must breathe 100% O_2 at 34,000 feet. Limit on 100% O_2 is 40,000 feet. Above this altitude a pressure suit is used to allow required pressures of O_2 to be introduced to lungs and over body at equal levels.

Protection generally involves
(1) Cabin Pressure or;
(2) Cabin Pressure plus O_2;
(3) Pressure Suit including O_2.

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2. Training is given in two (2) phases

(a) Phase I is academic approximately 5 days

(b) Phase II is Field work approximately 5 days

K. Parachute Training: (Local Area)

1. This training is designed to get the pilot safely on the ground from an emergency ejection

(a) Cover equipment, parachute, kit, harness and flotation

(b) Operation of seat stabilization chute and deployment of main chute.

(c) Release of survival kit

(d) Describe briefly how to control the parachute in the air

(e) Describe briefly the mid-air modification for steerability (4-line release)

(f) Describe the preparation for landing:

1. Normal

2. Tree - (No kit release)

3. Through wire

4. Water

(g) Describe a parachute landing fall. (Landing-fall platform 2 and 4 feet with sawdust pit)

(h) Technique for descending safely from a tree hang-up (Parachute training tower)

L. Water Survival- (Pool or Lake)

(1) Use of life preservers and rafts and kits

(2) Prepare for water landing, release his parachute and enter the water correctly (Pilot will wear complete pressure suit with survival kit and raft for this training)

M. Drownproofing (Pool or Lake)

(1) Basic instruction in drownproofing

(2) Enter the water by jumping from a height of approximately 10 feet

(3) Stay afloat fully clothed for one (1) hour without tiring

(4) Traverse 75 yards fully clothed, utilizing drownproofing method

N. Communcations:

(1) The operation of all emergency radios that may be used

(2) The operation of smoke flares

(3) The operation of Pen-Gun flares

(4) The operation of signal mirrors

(5) The techniques of construction of emergency signals

O. Rescue Techniques

1. Be familiar with standard rescue procedures

(2) Be familiar with rescue equipment

(3) Practice pickups with all type of rescue equipment

P. Field Training

(1) Field training will be conducted under secure sterile non-military conditions and with direct support of a security officer unless otherwise directed by Headquarters. Equipment used for training must

25X1

(2) The number of students for each field training exercise should be kept to a minimum to achieve individual instructions.

(3) Basic Survival principles and techniques can be taught almost anywhere in the U.S. The specialized survival training can be given only in regions that simulate conditions exisiting in possible areas where project pilots may have to survive.

(4) Specific Area training may be divided into Arctic, Mountain, Desert, Tropics and Water or Seacoast. Such training should be conducted in areas specifically.

(5) General subjects covered in field training exercises.

(a) Care and use of equipment

(b) Environmental hazards

(c) Survival medicine

(d) Protection from the elements

(e) Firecraft

(f) Procurement of animal and plant food

(g) Procurement of water and water substitutes

(h) Preparation and preservation of food

(i) Emergency communications

(j) Travel techniques, navigation

(k) Evasion techniques

(l) Improvise clothing and equipment

(m) Evasion problem

(n) Rescue techniques

Q. Para-sail training

(1) Definition: The para-sail is an ascending parachute which provides sufficient lift while under tow to hoist a man with full flight clothing, life preserver and survival kit to heights from which he can make safe and completely realistic parachute descent. As used in this Program, it provides actual experience in overwater parachute descent and water entry. Ideally, this is accomplished so that the student deploys his survival kit/life raft and life

preserver while airborne and transitions from the parachute descent/water entry into the one-man raft training exercise.

(2) Equipment for para-sail training:

(a) One (1) launching platfrom 24' wide by 32' long and is mounted on a modified pontoon boat (Constructed by [redacted] (Use model) 25X1A

(b) One (1) boat 23'3" Formula with dual 150 HP Mercuriser engines. A heavy aluminum wench with 1200 feet of polypropylene line is installed on the deck cockpit for the purpose of towing the para-sailer.

(c) Two (2) Boston Whalers, 16'17'' with twin 50 HP Mercury motors. One boat is used for recovery of the para-sailor and the other boat used for security patrol and transporting students.

(d) Platform tow line is 180' long (released after lift off)

(3) Para-Sail Training Team Composition:

(a) Training team will consist of the following:

(1) Tow Boat:

a. Boatmaster

b. Team Commander/Tow Controller

c. Tow Reel Operator

(2) Launching Platform:

a. Chief Instructor/Briefer/Launch Controller

b. Two (2) Canopy Handlers/Personnel Equipment Technician

(3) Recovery Boat:

a. Boatmaster

b. Two (2) Recovery Personnel/ Survival/Medical Technician

(4) Security Boat

a. Boatmaster

b. Security Officer

AERO MEDICAL PROGRAMS

PHYSICS OF THE ATMOSPHERE

Layers and Characteristics -

Pressure -

Temperature -

Gas Laws -

RESPIRATION AND CIRCULATION

Mechanics of Breathing -

Circulation -

Transportation and Utilization of Oxygen -

HYPOXIA

Definition -

Types:

1. Hypoxic Hypoxia -

2. Hypemic Hypoxia -

3. Stagnant Hypoxia -

4. Histotoxic Hypoxia -

Symptoms of Hypoxia -

Times of Useful Consciousness -

HYPERVENTILATION

Definition -

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Mechanism of Hyperventilation -

Symptoms -

DYSBARISM

Trapped Gases:

1. Stomach and Intestines -

2. Ear -

3. Sinus -

4. Teeth -

Evolved Gases:

1. Paresthesia -

2. Bends -

3. Chokes -

4. Circulatory and Central Nervous System Disorders -

Factors -

Treatment and Prevention -

PRESSURIZATION

Definition -

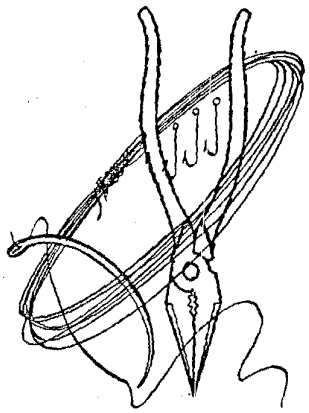
Types -

Advantages -

Decompression -

Factors Determining Rate -

Physical Recognition -



MINIMUM ESSENTIAL ITEMS

High quality pocket knife with at least two cutting blades.

Pocket compass.

Match safe with matches.

- Plastic or metallic container.
- Waterproof kitchen-type matches (cushion heads against friction), or
- Waterproof matches rolled in paraffin-soaked muslin in an easily opened container such as small soap box, toothbrush case, etc.

Needles — sailmakers, surgeons, and darning — at least one of each.

Assorted fishhooks in heavy foil, tin, or plastic holders.

Snare wire — small hank.

Needle-nosed pliers with side cutters; high quality.

Bar surgical soap or hand soap containing physohex.

Small fire starter of pyrophoric metal (some plastic match cases have a strip of the metal anchored on the bottom outside of the case).

Personal medicines.

Water purification tablets.

"Bandaids."

Insect repellent stick.

Chapstick.

GOOD TO HAVE ITEMS

*Pen-gun and flares.

*Colored cloth or scarf for signaling.

Stick-type skin dye (for camouflage).

Plastic water bottle.

*Flexible saw (wire saw).

*Sharpening stone.

Safety pins (several sizes).

Travel razor.

Small steel mirror.

6" flat bastard file.

Aluminum foil.

ADDITIONAL SUGGESTIONS

Toothbrush — small type.

Surgical tape.

Prophylactics (make good waterproof containers and/or canteens).

*Penlight with batteries.

Fishline.

*Fishline monofilament.

Code card (Morse code).

Emergency ration can opener (can be taped shut and strung on dog tag chain).

Split shot — for fishing sinkers.

Gill net.

Small, high quality candles.

INDIVIDUAL MEDICAL KIT

Sterile gauze compress bandage.

Anti-biotic ointment (Neomycin polymycin bacitracin opthalmic ointment is good).

Tincture of zephrine — skin antiseptic.

Aspirin tablets.

Salt tablets.

Additional medications may be desirable, depending upon nature of the mission and an individual's particular personal needs.

This should be discussed with and procured from your local flight surgeon.

*Especially valuable.

Personal Survival Kit Items

Slide #1

Aeromedical Staff

LIFE SUPPORT

equipment
training

AEROMEDICAL SUPPORT

selection
evaluation
training

Slide #2

LIFE SUPPORT

includes:

Equipment

Procedures

Systems

Training

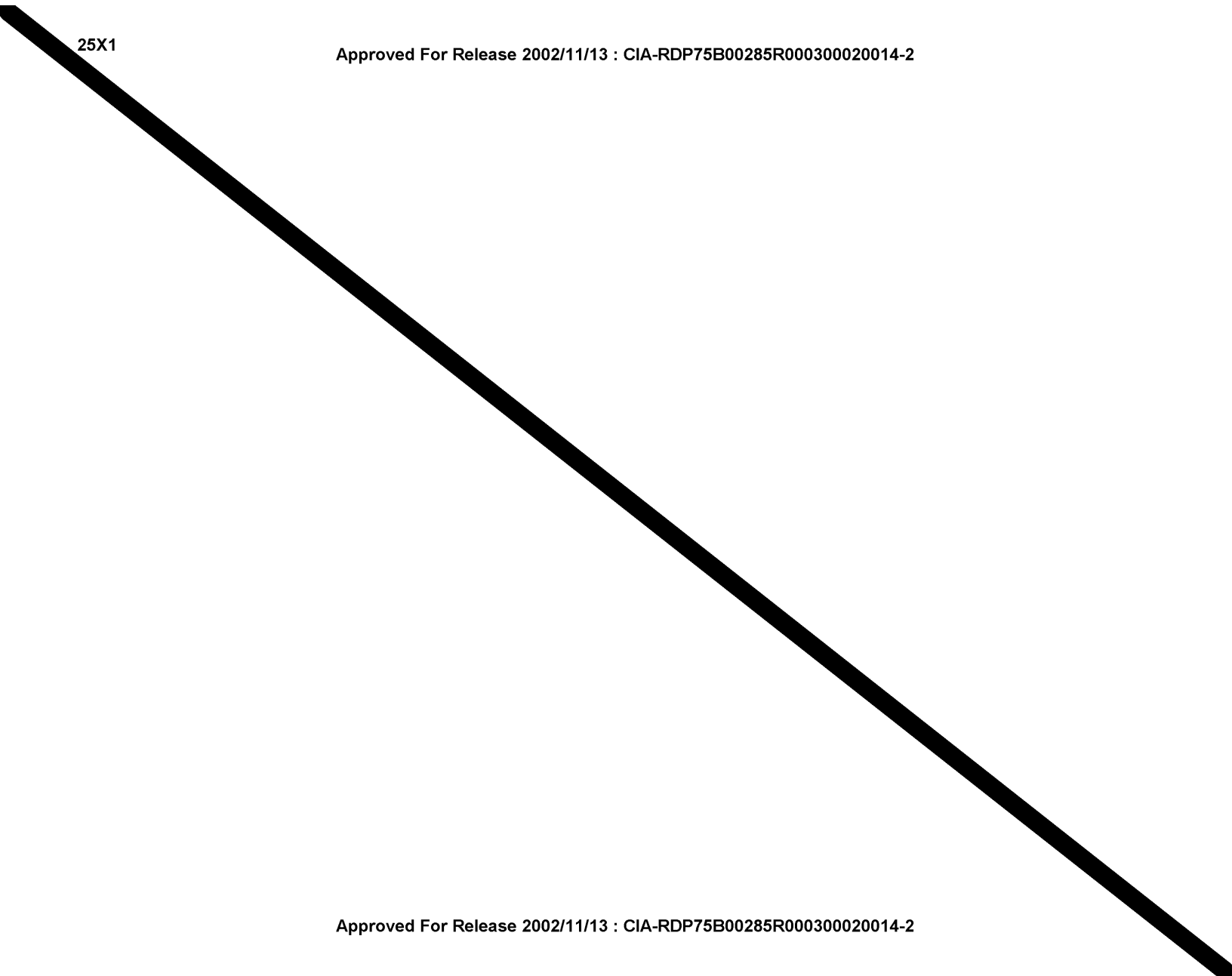
designed to:

Protect the Aircrew

Insure Optimum Performance

Slide #3

AIRCRAFT SYSTEMS	AIRCREW SYSTEMS
Cockpit Pressurization	Oxygen Delivery
Cockpit Air Conditioning	Head Protection
Oxygen Supply	Parachute
Ejection	Survival Equipment
Instrument Configuration	Emergency Oxygen Supply
Controls Configuration	Clothing
Ventilation	Feeding Provisions
Restraint	Cushions
Relief	



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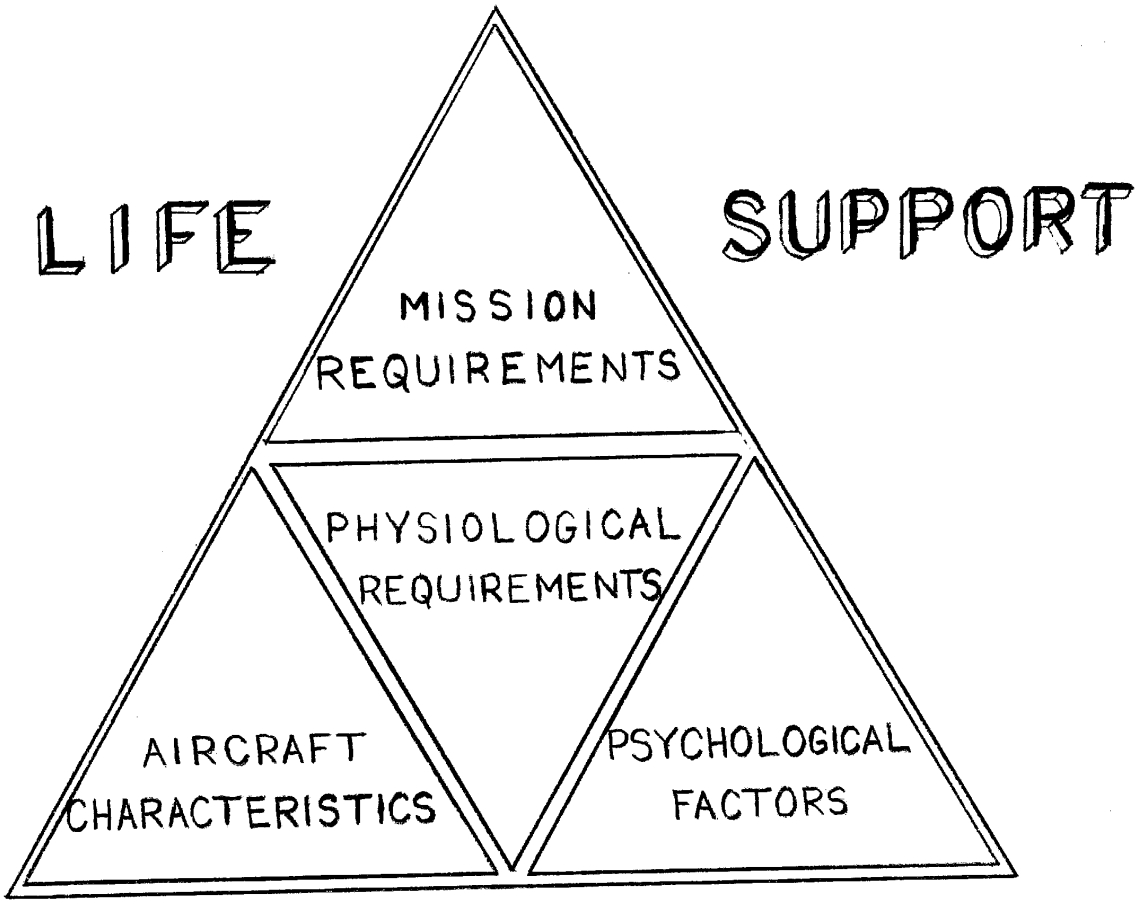
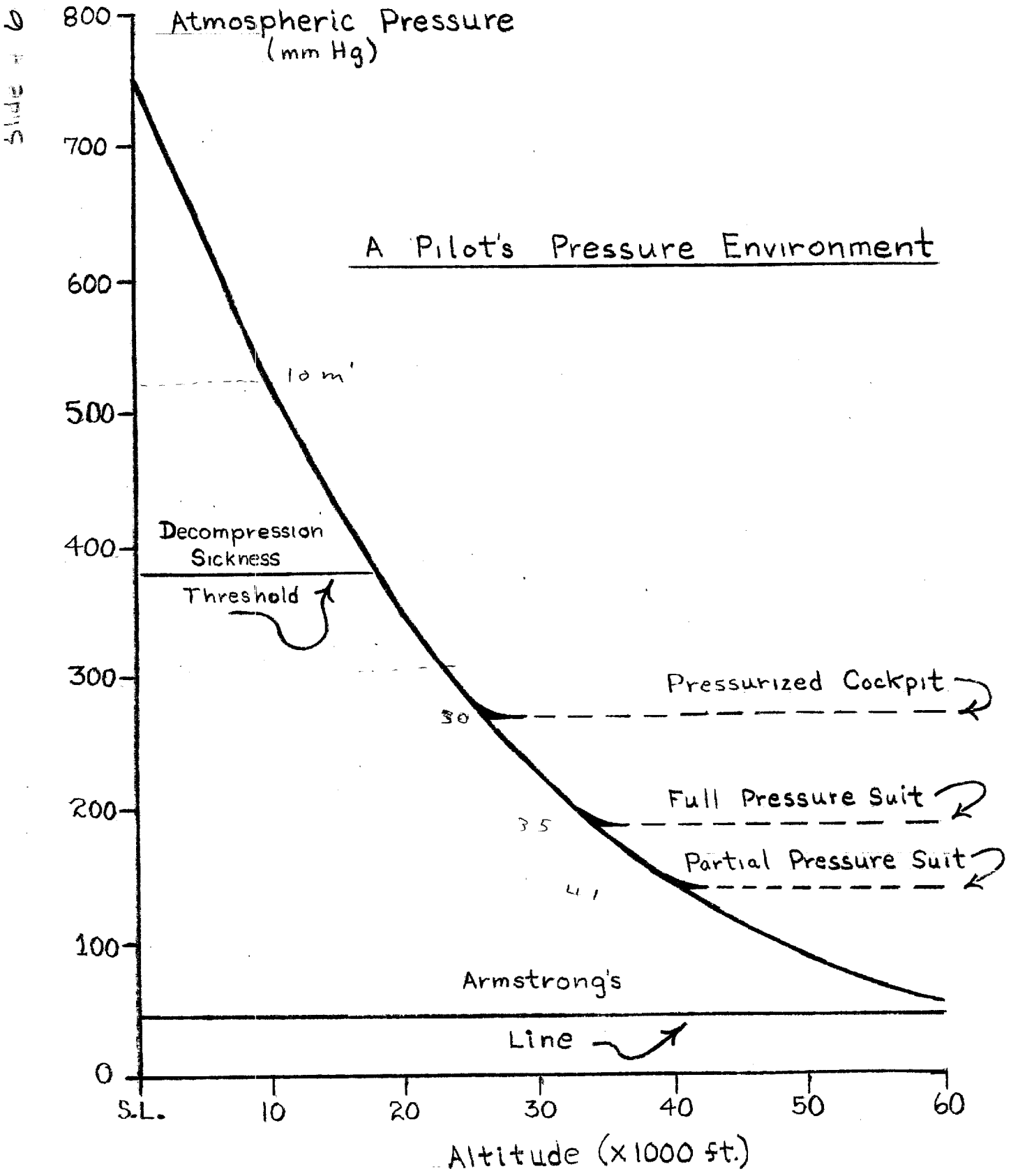
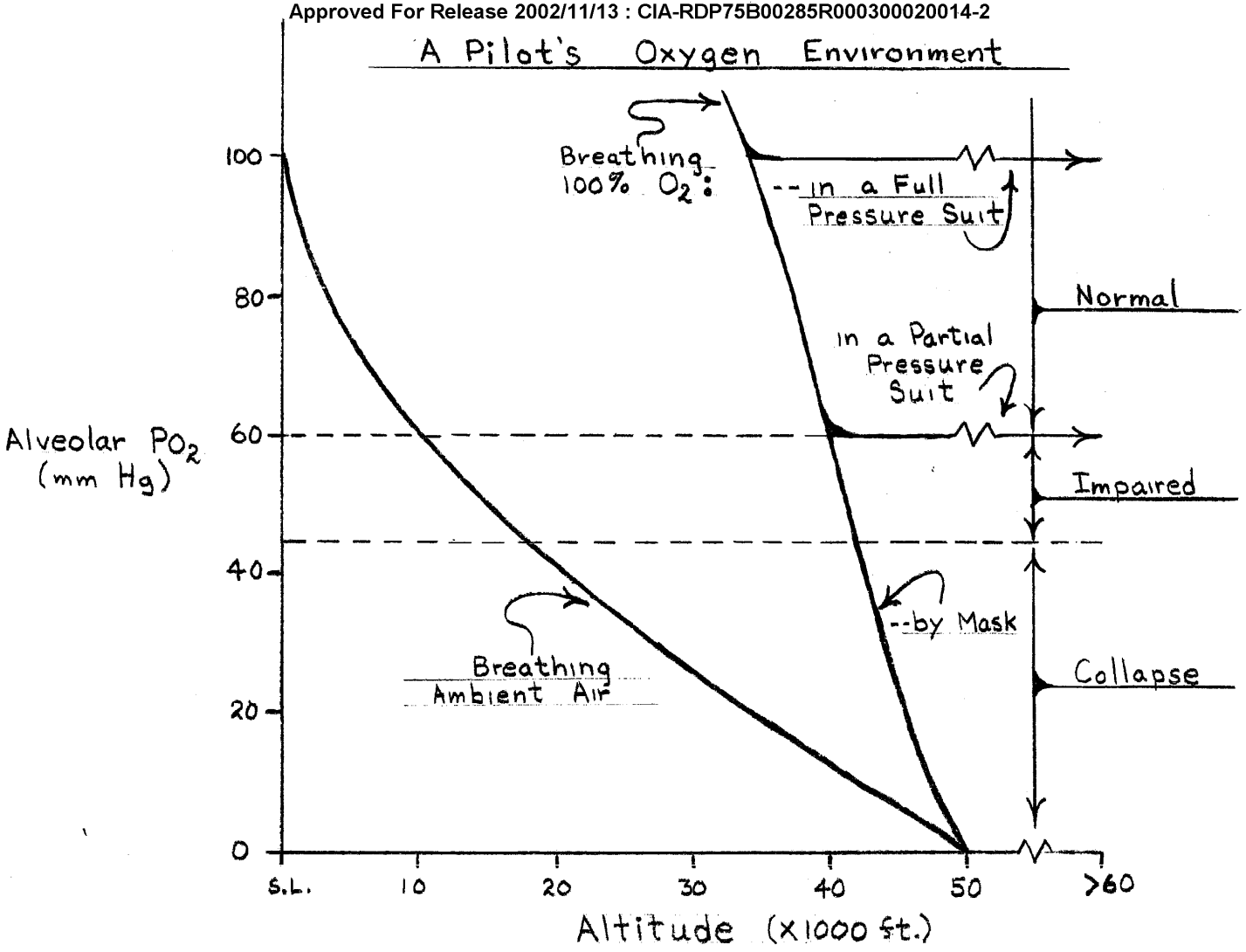


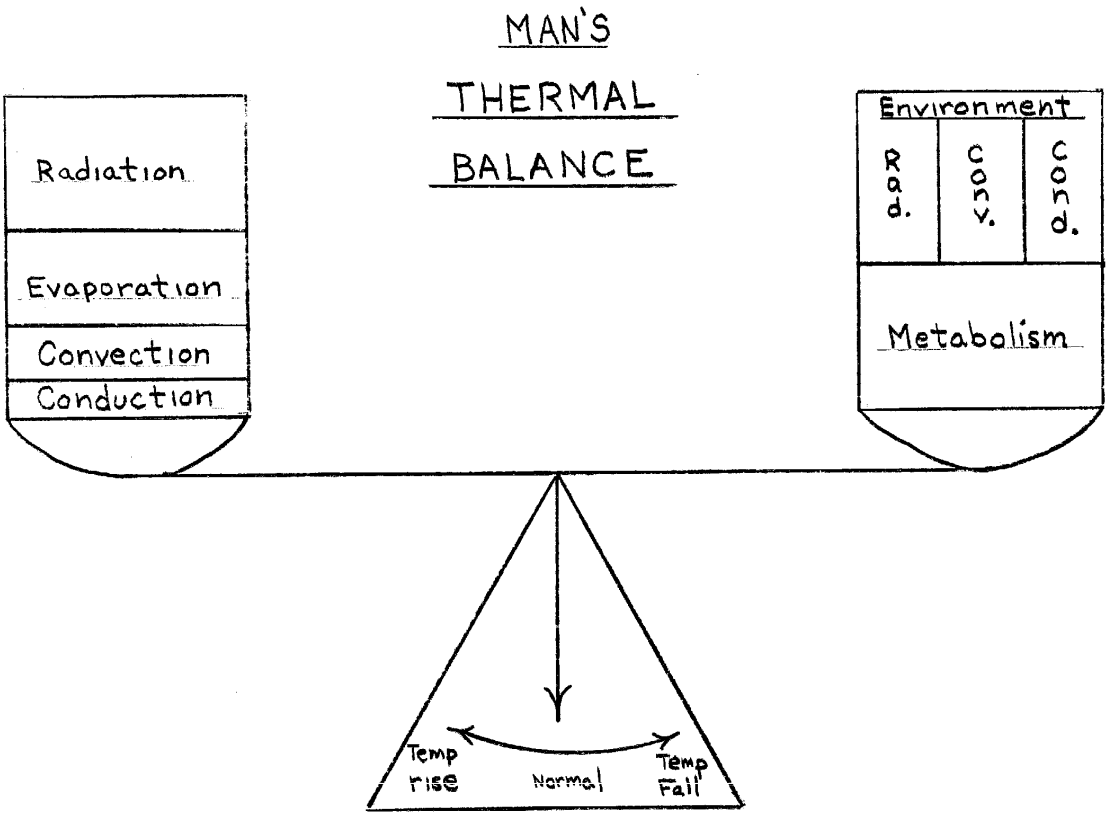
PROGRAM



slide # 7



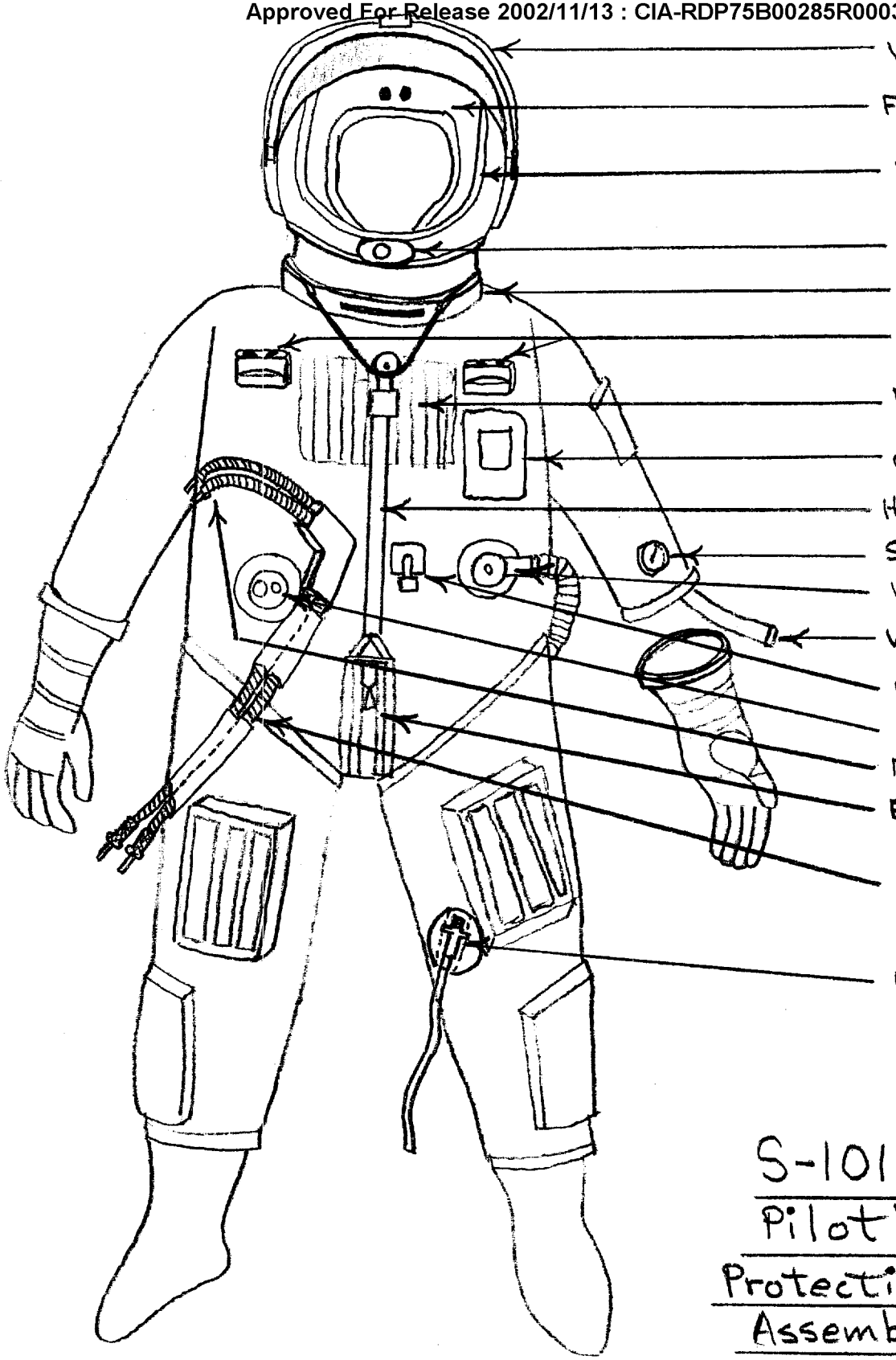
Slide #8



Slide #9

SEQUENCE OF ESCAPE HAZARDS

	Low Speed	High Speed	Low Altitude	High Altitude
1. Making the Decision to Eject	✓	✓	✓	✓
2. Rapid Decompression				✓
3. Separation from the Aircraft	✓	✓	✓	✓
4. Windblast		✓		
5. Deceleration		✓		
6. Spin				✓
7. Hypoxia				✓
8. Frostbite				✓
9. Parachute Opening		✓		✓
10. Parachute Landing	✓	✓	✓	✓
11. Canopy Release	✓	✓	✓	✓
12. Survival	✓	✓	✓	✓



S-1010
Pilot's
Protective
Assembly

slide #10